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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,553	10/06/2004	Nicolai Papke	05587-00368-US	1658
23416	7590	10/23/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			TOSCANO, ALICIA	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/506,553

Applicant(s)

PAPKE, NICOLAI

Examiner

Alicia M. Toscano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/02/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-7, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Auerbach (US 4652594).

Auerbach discloses glass fiber reinforced oxymethylene polymer molding compositions. Said compositions comprise 20-30% glass fiber (Column 12 Line 68), or additive, 50-95 wt% polyoxymethylene (Column 13 Line 2), 0.2 to 5 wt% of an amino resin (Column 13 Line 18), and 0.001 or 0.01 wt% catalyst (Column 15 Line 50), which catalyzes the coupling reaction between the amine resin, the glass fiber and the polyoxymethylene. The catalyst is disclosed in Column 12 Lines 54-58 to be a weak acid of an organic phosphate. Thus all the limitations of Claims 1, 2, 3, 4, 5, 6, 7 and 12. Bars, rods, plates and the like, or molded articles, are disclosed in Column 13 Line 61, as required for Claim 11.

Examiner notes Applicants expression of unexpected results that phosphoric and titanyl acids are superior to boric acid compounds. Auerbach teaches boric and organic phosphates to be functionally equivalent. After thorough evaluation of Tables 1-3 specifically comparing Composition 3 (boric acid) with Compositions 5, 9, 11, 13, 15 and 16, Examiner notes that only triphenylphosphane (Comp 13) and

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stearyltributylphosphonium bromide (Comp15) show unexpected results in comparison to Boric acid compositions.

2. Claims 1-7, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Natarajan (US 4480071).

Natarajan discloses isocyanate coupled reinforced oxymethylene polymers. Said polymer comprise 0-40 wt% glass fibers (Column 8 Line 51), 0.2-2 wt% isocyanate compound, or coupling agent, 0.15-2.5 wt% isocyanate catalyst (Column 8 Line 31), the remaining being polyoxymethylene polymer (abstract, Examples), thus meeting the requirements for Claims 1-4. The catalyst can be titanium based, such as tetrabutyl titanate (Column 8 Line 8), as required for Claims 5 and 12. The glass fiber acts as a reinforcing fiber, as required for Claims 6-7 and Column 13 Line 42 discloses molded articles from the composition, as required by Claim 11.

3. Claims 1, 3-6 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyawaki (EP 06240105).

Miyawaki discloses a resin composition comprising a 100 wt parts polyacetal, 1-100 wt parts acid anhydride modified polyolefin, 0.1-5 wt parts esterification catalyst and 0-150 wt parts filler (abstract). The modified polyolefin improves impact strength and is thus deemed an additive (abstract). The esterification catalyst acts to react the polyacetal with the polyolefin [0003] and can be tetrabutyl titanate. Thus the limitations

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for Claims 1, 3, 4, 5, 6 and 12 are met. A molded article is disclosed in Example 1, as required by Claim 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 8, 12, 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auerbach in view of Hwang (US 2004/0158023).

Auerbach includes elements of the invention as discussed above. Auerbach does not include the use of specific organic phosphoric acids. Hwang discloses halogen free resin compositions. Said compositions use a hardening accelerator for the esterification of an epoxy resin with a hardener which has an amino group [0013]. Said hardening accelerator, or catalyst, can be a tertiary phosphine or a quaternary

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phosphonium salt [0044], such as triphenyl phosphine [0046], tetrabutylphosphonium bromide, tetraphenylphosphonium bromide and ethyletriphenylphosphonium bromide [0048]. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Auerbach the organic phosphonium salts taught by Hwang, as these are species of the genus taught by Auerbach.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auerbach or Nataragan in view of Sharma (US 6090319).

Auerbach and Nataragan include elements of the invention as discussed above. Auerbach and Nataragan do not include the use of a glass fiber bundle which has been impregnated with a polyacetal resin and then bonded to a second component. Sharma discloses a method for coating fibers. Said method comprises step (c) impregnating fiber strands with a first thermoplastic resin material to produce a long fiber reinforcing composite structure and (g) coating said long impregnated fiber with a second thermoplastic resin material, wherein the first and second thermoplastic resin materials are bonded at the first and second thermoplastic resin material interface (Column 2 Lines 31-65). The first thermoplastic resin can be a polyacetal (Column 5 Line 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Auerbach or Nataragan the method taught by Sharma to coat said fibers. Auerbach and Nataragan teach compositions which covalently bind polyacetal to fibers, such a teaching would improve the adhesion between the fibers and the first

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thermoplastic resin, or polyacetal, of Sharma, yielding a coated fiber which had superior properties.

6. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nataragan in view of Sonoda (US 6129961).

Nataragan include elements of the invention as discussed above. Nataragan does not include the use of the titanyl catalysts of Claims 13 and 14. Sonoda discloses the production of polyester resins. Sonoda further discloses the use of titanium compounds for esterification (Column 15 Line 30), said titanium compound can be tetrabutyl titanate (the titanate disclosed by Nataraga), which is taught by Sonoda to be functionally equivalent to titanyl compounds such as titanyl potassium oxalate, titanyl calcium oxylate and the like (Column 15 Lines 49-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Nataragan the use of the titanyl catalysts, as taught by Sonoda, since these catalysts are taught to be functionally equivalents in the art.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

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F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-17 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 1, 4, 9, 10, 11, 12, 16, 17, 18, 19 and 20 of copending Application No. 10506541. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reaction of components (a), (b) and (c) where (a) is a polyacetal and (c) is a Lewis acid in Claims 1 and 5 of '541 meet the limitations of Claims 1-3 and 6 of instant application. Further, Claim 4 of '541 meets the limitations of instant Claim 4, Claim 9 of '541 meets the requirements of instant Claims 5, 8 and 12, Claim 10 of '541 meets the limitations of instant Claim 9, Claim 11 of '541 meets the limitations of instant Claim 10, Claim 12 of '541 meets the requirements of instant Claim 11, Claim 16 of '541 meets the limitations of instant Claim 15, Claim 17 of '541 meets the limitations of instant Claim 14, Claim 18 of '541 meets the limitations of instant Claim 15, Claim 19 of '541 meets the limitations of instant Claim 16 and Claim 20 of '541 meets the limitations of instant Claim 17.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

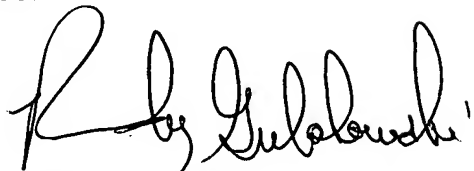
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is 571-272-2451. The examiner can normally be reached on Monday to Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMT


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